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ABSTRACT

A study was conducted to compare the relative performance on yes-no questions of bilingual and monolingual children and to discuss the relationship of semantic development and linguistic development, both in the bilinguals and monolinguals. Eighteen English monolingual, eighteen Japanese monolingual, and eighteen Japanese-English bilingual children, three, four, and six years old, were individually asked positive questions, corresponding negative questions, positive tag questions, and corresponding negative tag questions. All subjects were tested on comprehension of spatial terms and of passive sentences to check their general level of language development. It is concluded that the English answering system is more natural to young monolingual children and that bilingual children answer Japanese negative questions using the English way but have some difficulty in answering English negative tag questions. The performance of bilingual children in the two languages was not consistent with that of monolingual children in their respective languages. There is an implication that two separate linguistic systems do not work in an additive way in bilingual children. The relationship of semantic development to linguistic development in bilingual children is not identical with the relationship in monolingual children. (SW)

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NEGATIVE QUESTIONS IN JAPANESE-SPEAKING, ENGLISH-SPEAKING, AND JAPANESE-ENGLISH BILINGUAL CHILDREN[1]

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An important problem in current developmental psycholinguistics is the relationship of linguistic development to semantic development. Some researchers (Brown, 1973; Slobin, 1973) have argued that if a bilingual child acquires a particular mode of linguistic expression in one language earlier than in the other language, it implies that the linguistic form that is acquired earlier is simpler than the one that is acquired later. The argument can be extended to monolingual cases in the following manner. The simpler linguistic form will be acquired earlier, and the linguistically more complex form will be acquired later in monolingual children equally developed in cognition. The arguments seem clear and reasonable. However, it should be noted that in order for these arguments to work, we have to assume that the relationship of cognition to the two linguistic forms is the same in the bilingual child as it is for the monolingual child. I think it is worth questioning this assumption. If the two modes of expression interact or affect each other within a bilingual child, the data from a bilingual child may not offer reliable information on linguistic complexity. What I have done in this study is to compare the relative performances on yes-no questions of bilingual and monolingual children and to discuss the relationship of semantic development and linguistic development, both in the bilinguals and in the monolinguals.

Emily Pope (1973) showed that the yes-no question-answering system of all languages can be described with two dimensions. One dimension is whether the answer following yes or no contains a negation in its highest clause. The other is whether or not the answer agrees with the statement form of the question. Since each dimension has two values, there are basically four categories of answers, as is shown in Table 1. Although 16th century English used to have four different morphemes for these categories, modern English uses only two morphemes, yes and no, depending on whether the following answer contains a negation in its highest clause. That is to say, modern English abandoned the rule on agreement or disagreement with the statement form of the question. In

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Table 1

The two dimensions of the yes-no question-answering system in 16th century English, Modern English, and Japanese

	Agreement to the statement of a question	Disagreement to the statement of a question	
	16th century English		Modern English
Positive: No negation in the highest clause in an answer	(Are you going?) Yea.	(Aren't you going?) Yes.	Are you going? Yes, I am going. Aren't you going?
Negative: negation in the highest clause in an answer	(Aren't you going?) No.	(Are you going?) Nay.	Aren't you going? No, I am not going. Are you going?
	Japanese		
	Are you going? Yes, I am going.	Aren't you going? No, I am going.	
	Aren't you going? Yes, I am not going.	Are you going? No, I am not going.	

contrast, the Japanese answering system uses two morphemes, hai and iie which roughly correspond to yes and no in English and the system is based on the agreement or disagreement with the statement form of the question. The difference between the two languages becomes clear when answering negative questions.

With these linguistic analyses in mind, let me analyze an example of a negative question from both languages at the psychological level. In answering the negative question "Aren't you going?" an English speaker answers yes or no, depending on his underlying intention in the matter. He answers "Yes, I am going," if he intends to go. If not, "No, I am not going." On the other hand, a Japanese speaker answers yes or no, as an affirmation or denial of the literal statement of the question. In other words, yes means what you just said is correct and no means it is incorrect. To the same negative question, he answers, "No, I am going," if he denies the statement of the negative question. If he agrees, he answers "Yes, I am not going." Table 2 shows a summary of how an English-speaker, and a Japanese-speaker should answer the simple negative question.

Table 2. Analysis of negative questions, answers to them, and the underlying intention in speakers of different languages

Language of Speaker	Negative question	Answer	Underlying Intention
English speaker	Aren't you going? (negative)	Yes, (positive)	I am going. (positive)
	Aren't you going? (negative)	No, (negative)	I am not going. (negative)
Japanese speaker	Aren't you going? (negative)	No, (negative)	I am going. (positive)
	Aren't you going? (negative)	Yes, (positive)	I am not going. (negative)

The same analysis is also applicable to negative tag questions of both languages. In parenthesis under each statement, meanings of the statement are shown in terms of positiveness or negativeness. In English, positive or negative answers (yes, or no) will be determined by the underlying intention. In Japanese, the answers will be made by the congruence between the statement form of the negative question and the underlying intention. With these facts, it is possible to develop basic hypotheses about the order of acquisition.

Hypothesis I

If from the child's viewpoint the answer to a negative question depends on the underlying intention, the English rule is more natural. Yes (positive) corresponds with the underlying intention (positive) and no (negative) corresponds with the underlying intention (negative). If this is a universal strategy in child language acquisition, Japanese-speaking children will initially tend to respond to a negative question in the same way as English-speaking children do. In this case, the acquisition of of answering negative questions will be postponed in Japanese-speaking children. This hypothesis is based on congruence with the underlying intention.

Hypothesis II

If the answer to a negative question depends on the congruence between the statement form of the negative question and the underlying intention, the Japanese rule is more natural. No (negative) is selected because the negative question (negative) is incongruent with the intention that I am going (positive). Yes is selected because the negative question is congruent with the intention that I am not going (negative). If this is a universal strategy in child language acquisition, Japanese-speaking children will acquire the answering system earlier than the English-speaking children. This hypothesis is based on the congruence of a statement form of the question with the underlying intention.

These two hypotheses are the major ones in predicting the order of acquisition in English and Japanese monolingual children.

Hypothesis III

If one and the same child has to deal with two opposite strategies as described in Hypotheses I and II, he will have difficulty in acquiring one or possibly both of the answering systems. The difference between the two linguistic rules will not affect the underlying intention, but will affect the operations used to map the underlying intentions onto the linguistic forms. This hypothesis predicts a later acquisition of answering negative questions in at least one of the two languages in bilingual children than in monolingual children.

Method

English monolingual, Japanese monolingual, and Japanese-English bilingual children were individually asked positive questions, corresponding negative questions, positive tag questions, and corresponding negative tag questions.

In order to check their general level of language development, all the subjects were tested on comprehension of spatial terms and of passive sentences. Bilingual children were asked the same questions in the two languages during different sessions.

Subjects

Japanese-English bilingual children available in Urbana-Champaign served as bilingual subjects. Most of them came to the United States after having acquired the Japanese language. Only children who had been in the United States for at least one year and who were able to communicate with people in English, were used as bilingual subjects.

Because the bilingual children were mostly from homes of graduate students or faculty members, the two types of monolingual subjects were matched on the basis of their family background.

The total number of subjects was 54, of which 18 were bilingual, 18 were English monolingual and 18 were Japanese monolingual. The children's ages were three, four, and six. There were six subjects in each age level and language group.

Tasks

Thirty-two questions were constructed along two dimensions. One was type of question, that is, positive, negative, positive tag and negative tag. The other was type of verb used to ask the question, that is, *is*, *are*, *do*, and *can*. Therefore, 4 x 4 categories of questions were constructed. In each category, two questions were asked. One was a question whose expected answer was *yes*, the other a question whose expected answer was *no*. All the questions asked are listed in the Appendix. Half of the questions were asked in one session, and the other half asked in a second session. Order of questions was counterbalanced for both monolingual and bilingual children.

The tests of general linguistic ability consisted of two parts, one for semantic development and the other for syntactic development. The test for semantic development was a comprehension test of spatial terms: *in*, *on*, *under*, *between*, *in front of*, *in back of*, and *at the side of*. The subject was asked, for example, to put the block *in* the box.

The test for syntactic development was a comprehension test of passive sentences. The verbs used were *push*, *kiss*, and *kick*. Six sentences including these verbs were read by the experimenter, and the subject was asked to act out the sentence.

Procedure

The child was individually tested on the questions at his day care center or school. After answering the questions, the subject was given the tests of general linguistic ability. The entire session was tape-recorded.

Results

I would like to focus on the two basic aspects of the results. One is to see if negative questions are harder than positive questions both within each language and across two languages in monolingual and bilingual children. The other is to see whether the performances of bilingual children in two languages are comparable or consistent to those of monolingual children. Effects of age or interaction of age by types of questions will not be reported in this paper.

Before going into the main part of the results, the general linguistic abilities in the different language groups should be mentioned. Japanese and English monolingual children are quite comparable in understanding spatial terms and passive sentences. At age three, their performance is relatively good in the semantic test and both groups begin to understand the passive sentences. At six years of age, both groups make almost perfect scores in these tests. As for the bilingual children, they showed slightly better performance when they were asked in Japanese.

Very general overall results are shown in Table 3. In English-speaking monolingual children, negative questions including tag are slightly but significantly harder than positive questions. In Japanese-speaking children, negative questions are considerably harder than positive ones. Across the two language groups, overall performance of negative and positive questions are compared by pairing 18 subjects on the basis of age.

Table 3. The mean number of correct responses to overall positive and negative questions in monolingual and bilingual children (Simple questions and tag questions combined)

	Monolingual			Bilingual	
	Positive	Negative		Positive	Negative
English	15.33	14.61	English	14.78	13.00
Japanese	15.28	12.76	Japanese	14.27	6.16

The results of Wilcox Tests

Comparison	Z value (Ss)	Z value (Item)	Z value (Ss)	Z value (Item)
EP - EN	-2.00*	-1.703*	-2.678**	-2.697**
JP - JN	-3.551***	-3.407***	-3.723***	-3.516***
(JP-JN)-(EP-EN)	-3.053**	-2.640**	-3.456***	-2.998**

Note: *, **, *** mean statistical significance at .05, .01, and .001 level, respectively.

In other words, we would like to see if Japanese-speaking children find it harder to answer negative questions than English-speaking children do. The Wilcoxon test shows the negative questions are relatively harder for Japanese children than they are for English children. Following and extending Clark's (1973) argument on language as random effects, z scores for subjects and for item pairs are calculated. These analyses support the results reported above.

When the bilingual children are asked questions in English they show poorer performance on the negative ones. When they are asked questions in Japanese, their performance on negative questions falls below chance. This suggests that the bilingual children switch to the English answering system when they answer the negative questions in Japanese. The performance of the bilingual children on the Japanese negative questions is not consistent with that of the Japanese monolingual children.

Detailed results for the monolingual children are shown in Table 4.

Table 4

The mean number of correct responses to the four types of questions in monolingual children

English-speaking children					Japanese-speaking children				
	Question type					Question type			
Age	P	N	PT	NT	Age	P	N	PT	NT
6	8.00	7.83	7.83	7.83	6	8.00	7.00	7.00	6.67
4	8.00	7.00	7.17	7.17	4	8.00	6.33	7.33	6.50
3	7.83	7.33	7.17	6.67	3	8.00	6.17	7.50	5.50

In both monolingual cases, simple negative questions tend to be harder than simple positive questions. The same tendency holds for tag questions. The Wilcoxon test confirms this with the exception of tag questions in English-speaking children. For English-speaking children negative tag questions are as easy as positive tag questions.

The bilingual data are shown in Table 5. Although the overall effects of English negative questions are significant, as we have seen, English negative questions are not harder for Japanese-English

Table 5

The mean number of correct responses to the four types of questions in Japanese-English bilingual children

	Asked in English				Asked in Japanese				
	Question type					Question type			
Age	P	N	PT	NT	Age	P	N	PT	NT
6	7.83	7.67	7.17	5.33	6	8.00	4.17	7.83	5.83
4	8.00	7.17	7.50	5.67	4	7.66	2.00	7.00	2.33
3	7.33	7.17	6.50	6.00	3	6.66	2.00	5.66	2.16

bilingual children. They have much more difficulty in answering English negative tag questions. This is probably because the construction of English negative tag questions is closer to a statement, i.e., the word order is the same as a statement. The bilingual children answer Japanese negative questions and negative tag questions in the English way, and therefore their performance is not just poorer, but below chance level.

Discussion and Conclusions

Hypotheses I and II are concerned with the problem of which linguistic system is more natural to young children. Originally these were supposed to be the alternative hypotheses. However, the data revealed that this was not entirely the case. That is to say, in order to answer the question of which linguistic system is more natural, we have to specify the conditions of the use of language and the types of subjects. As far as the monolingual groups are concerned, we can safely conclude that the English answering system is more natural. However, the data from the bilingual children makes the situation more complicated. When they are asked the negative questions in Japanese, they switch to the English answering system. For these children, the English answering system is actually working when they answer the Japanese simple negative and negative tag questions. On the other hand, the same children have difficulty in answering the English negative tag questions, showing the effects of knowing the Japanese language.

It seems to me that three basic conclusions can be drawn from these data. One is that the English answering system is more natural to young monolingual children of age three to six, supporting Hypothesis I. The second is that bilingual children answer Japanese negative questions using the English way but have some difficulty in answering English negative tag questions. This basically supports Hypothesis II. The third is that the performance of bilingual children in the two languages is not consistent with that of monolingual children in their respective languages. This supports Hypothesis III, implying that two separate linguistic systems do not work in an additive way in bilingual children. The relationship of semantic development to linguistic development in bilingual children is not identical with the relationship in monolingual children.

APPENDIX

Construction of questions

Expected answer: yes	Expected answer: no
* Is your name _____?	Is your name _____?
Isn't your name _____?	*Isn't your name _____?
* This shirt is young, isn't it?	This nose is yours, isn't it?
This shirt isn't yours, is it?	*This nose isn't yours, is it?
* Are you a boy (girl)?	Are you a baby?
Aren't you a boy (girl)?	*Aren't you a baby?
* You are a child, aren't you?	You are a mommy, aren't you?
You aren't a child, are you?	*You aren't a mommy, are you?
* Do you like cookies?	Do you hit your daddy?
Don't you like cookies?	*Don't you hit your daddy?
* You have some toys, don't you?	You drive a car, don't you?
You don't have some toys, do you?	*You don't drive a car, do you?
* Can you throw a ball?	Can you eat a block?
Can't you throw a ball?	*Can't you eat a block?
*You can ride a bike, can't you?	You can carry your mommy, can't you?
You can't ride a bike, can you?	*You can't carry your mommy, can you?

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